National Institute of Environmental Health Sciences

Absence of dry season Plasmodium parasitaemia, but high rates of reported acute respiratory infection and diarrhoea in preschool-aged children in Kaedi, southern Mauritania

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Abstract:

BACKGROUND: The epidemiology of malaria in the Senegal River Gorgol valley, southern Mauritania, requires particular attention in the face of ongoing and predicted environmental and climate changes. While "malaria cases" are reported in health facilities throughout the year, past and current climatic and ecological conditions do not favour transmission in the dry season (lack of rainfall and very high temperatures). Moreover, entomological investigations in neighbouring regions point to an absence of malaria transmission in mosquito vectors in the dry season. Because the clinical signs of malaria are non-specific and overlap with those of other diseases (e.g. acute respiratory infections and diarrhoea), new research is needed to better understand malaria transmission patterns in this region to improve adaptive, preventive and curative measures. METHODS: We conducted a multipurpose cross-sectional survey in the city of Kaedi in April 2011 (dry season), assessing three major disease patterns, including malaria. Plasmodium spp. parasite rates were tested among children aged 6-59 months who were recruited from a random selection of households using a rapid diagnostic test and microscopic examination of Giemsa-stained thick and thin blood films. Acute respiratory infection and diarrhoea were the two other diseases investigated, administering a parental questionnaire to determine the reported prevalence among participating children. FINDINGS: No Plasmodium infection was found in any of the 371 surveyed preschool-aged children using two different diagnostic methods. Acute respiratory infections and diarrhoea were reported in 43.4% and 35.0% of the participants, respectively. About two thirds of the children with acute respiratory infections and diarrhoea required medical follow-up by a health worker. CONCLUSIONS: Malaria was absent in the present dry season survey in the capital of the Gorgol valley of Mauritania, while acute respiratory infections and diarrhea were highly prevalent. Surveys should be repeated towards the end of rainy season, which will enhance our understanding of the potential changes in malaria transmission in a region known as 'hot spot' of predicted climate change.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3465244

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Precipitation, Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Africa

African Region/Country: African Country

Other African Country: Mauritania

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease, Respiratory Effect

Infectious Disease: Vectorborne Disease

Foodborne/Waterborne Disease: Other Diarrheal Disease

Vectorborne Disease: Mosquito-borne Disease

Mosquito-borne Disease: Malaria

Respiratory Effect: Other Respiratory Effect

Respiratory Condition (other) : acute respiratory infection

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Children

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified